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February 3d.

The President, Mr. LEA, in the Chair.

Nineteen members present.

The following were presented for publication :

Systematic arrangement of the Mollusks of the Family Viviparidæ and others inhabiting the United States. By Theodore Gill.

Enumeration of the Arctic Plants collected by Dr. I. I. Hayes, in his Exploration of the Smith's Sound, etc. By E. Durand, T. P. James and S. Ashmead.

Mr. Cope mentioned the occurrence in the males of certain species of tree-toads of the genus *Trachycephalus*, of a corneous thickening of the epidermis of the interior metatarsus during the breeding season, similar to that in the genus *Discoglossus*. Also, that in certain South American *Bufones* the manubrium sterni is present, although, up to the present time, it has been denied that such is the case.

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February 10th.

The President, Mr. LEA, in the Chair.

Twenty-nine members present.

The following was presented for publication :

Remarks on the North American *Ægiothi*. By Elliott Coues.

Mr. Lea read part of a letter from Dr. Lewis, of Mohawk, New York, in which he said that he was gratified with one thing which was not apparent to him at first. In his notes on *Melania subularis*, Lea, and *M. exilis*, Hald., two species of his neighborhood, he finds an evident confirmation of Mr. Lea's views about *Trypanostoma* and *Goniobasis*, to which two sections of *Melanidæ* the two species belong. The soft parts affirm the correctness of Mr. Lea's generalizations from the shells. Dr. Lewis thinks the *sinus* in the sides of *subularis* is peculiar, and will be found in the whole group of *Trypanostoma* and the *granular sides* of *exilis* in the whole group of *Goniobasis*. It becomes now a curious speculation what may be the characters of *Anculosa*, *Schizostoma*, *Lithasia*, *Io*, &c.

Dr. Wilcocks read an extract from M. Arago's "Astronomie Populaire," vol. i. p. 459: "I have been anxious to ascertain who first noticed the existence of blue stars. The ancients only spoke of white and red ones. In the latter class they placed Arcturus, Aldeboran, Pollux, Antares and Orionis, which are still red. To this list (and the circumstance is worthy of remark) they added Sirius, whose whiteness strikes all eyes. It seems, then, that with time certain stars change color. The first observation (known to me) made of a blue star, occurs in the Treatise on Colors, by Mariotte, published in 1686."

Dr. Wilcocks stated that he had read the extract from M. Arago's work as a preface to an observation of his own,—viz.: that the star Sirius is no longer white; its present color is violet.

If the star, instead of undergoing a single change of color in the lapse of ages, should take in succession all the hues of the spectrum, it adds much to the interest of the subject, and will certainly give an impetus to inquiry concerning the cause of these remarkable changes.

Mr. Ennis remarked that this announcement by Dr. Wilcocks appeared to him deeply interesting, from the fact that for the past year he had made the colored, the variable, the periodic, the lost, and the temporary stars a special

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study. Catalogues have been made of some of these classes of stars, but no catalogue has yet been made of stars which have changed their color. Indeed, Humboldt, in writing about the red color ascribed to Sirius by the ancient Greeks, says, "Sirius, therefore, affords the only example of an historically proved change of color, for it has at present (1850?) a perfectly white light." And yet, in apparent contradiction to this, he, in other pages of the third volume of his *Cosmos*, mentions other fixed stars whose colors in modern times have been known to change.

This change of color is one of the greatest physical events. Think of our own intensely-lighted sun, 2,770,000 miles in circumference, as being deeply red, then turning to be perfectly white, then changing to purple, and then again to green! What mighty causes must be in operation to produce such grand results. This should be made a distinct section of astronomical study, and allied to that of the other classes of stars just mentioned; and I therefore offer the following as an enumeration of stars whose colors have changed.

#### CATALOGUE.

1. The temporary star described by Tycho Brahe in 1572. "For the first two or more months it was white; then it passed through yellow into red. At last, when very small, it again became white, but of a dull whiteness. These changes of color were attendant upon changes in amount of light. While this star was so large as to be seen with keen eyes by day, and even through the clouds by night, when all other stars were hidden, yet it scintillated more strongly than stars of the first magnitude," thus indicating a constitutional as well as an atmospheric cause for this scintillation.

2. Eta of Argus. This star, so wonderfully variable in the amount of its light, is also variable in its color. In 1843, Mr. Mackay, at Calcutta, observed that it was similar in color to Arcturus, and was therefore reddish-yellow. In Feb., 1850, Lieut. Gilliss, at Santiago, in Chili, writes of it as being "of a darker color than Mars," and therefore deeply red.

3. Beta of Ursa Minor. Heis, one of the most eminent German observers, writing to Humboldt in May, 1850, says that "this star is not always equally red; at times it is more or less yellow, at others most decidedly red."

4. Alpha Crucis. Humboldt, in *Cosmos*, vol. 3d, says, "My old friend, Captain Berard, who is an admirable observer, wrote from Madagascar in 1847, that he had for some years seen this star growing red."

5. Capella. In the tenth century this star was described by an Arabian astronomer as red. In 1850, Humboldt, in the third volume of his *Cosmos*, says, "it is now yellow, with scarce a tinge of red." In Sept., 1859, Rev. J. B. Kearney, in a letter to Sir J. Herschell, printed in the 20th volume, number one, of the *Monthly Notices of the Royal Astronomical Society*, says, "By the way, the color of Capella seems much less blue than it used to be." To myself, at present its color appears to be a delicate pale blue.

6. Sirius. In the times of the old Greek astronomers Sirius was red. In the Middle Ages the Arabian astronomers did not name Sirius among the red stars, neither did the earlier astronomers of the west of Europe. Therefore, it seems probable that its color changed from red to white between the times of the Greek and those of the Arabian observers. Humboldt, as I have said, writes in 1850 of this star as being "perfectly white." Two years ago, when another change was observed by Dr. Wilcox, a friend of his, who was accustomed to distinguish nice shades of color, pronounced the light of Sirius to be purple, in which opinion he concurred. Four months ago, when he made the announcement to me, I regarded it as blue with a decided tinge of green. At present it seems to myself and some friends as the most deeply-colored star in the sky, but as more green than blue.\*

\* A 7th star, Procyon, is to be added to the above catalogue, its change of color having been ascertained a night or two after the presentation of the others.

This is, indeed, a very short catalogue, but I hope it will prove worthy of presentation if it shall serve for the beginning of one more extended; for, on theoretical grounds, I am strongly of the opinion that many more changes of color occur among the stars than have been observed and recorded.

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*February 17th.*

Vice-President BRIDGES in the Chair.

Eighteen members present.

The following was presented for publication:

Catalogue of the N. American Sciænoids. By Theo. Gill.

The Committee on Proceedings laid on the table the published Number for October, November and December, 1862.

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*February 24th.*

The President, Mr. LEA, in the Chair.

Seventeen members present.

On Report of the respective Committees, the following were ordered to be published:

**Catalogue of the North American SCIÆNOID Fishes.**

BY THEODORE GILL.

Since the publication of the several articles on the Sciænoids of the Eastern Coast of the United States,\* the additional facilities which I have enjoyed have enabled me to detect some errors, adopted from previous laborers, in the nomenclature of those species, and I have been also led to propose some modifications in the arrangement of the family itself.†

A. Lower jaw received within the upper (vertebræ 10 | 14  
—14 + X.)

B. Teeth of both jaws developed; upper pharyngeal  
bones three.

C. Lower pharyngeal bones completely separated ..... SCIÆNINÆ.

\* Chin smooth.

† Caudal lanceolate; head above very broad,  
nearly flat between eyes; preoperculum  
behind crest cavernous and multipartite ..... Stelliferus.

†† Caudal entire or sinuated; head narrow, trans-  
versely convex; preoperculum behind crest  
flat.

1. Body and head oblong, compressed; anal  
under posterior half of second dorsal ..... Bairdiella.

2. Body and head elongated; anal under middle  
of second dorsal ..... Sciænops.

\*\* Chin with a single moderate barbel ..... Menticirrhus.

\*\*\* Chin with minute filaments ..... Micropogon.

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\* Catalogue of the Fishes of the Eastern Coast of North America, pp. 32, 33. (Feb. 14, 1861.)

Revision of the Genera of North American Sciæninæ, in "Proc. Acad. Nat. Sci., Philada.," 1861, pp. 79-89.

On the Liostominae, op. cit., 1861, pp. 89-93.

On the Haplidenotinae, op. cit., 1861, pp. 100-105.

† Note on the Sciænoids of California, op. cit., 1862, pp. 16-18.

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